Microrobots open up new treatment methods.

CAO LUC , NLD.COM.VN 1 NGÀY TRƯỚC

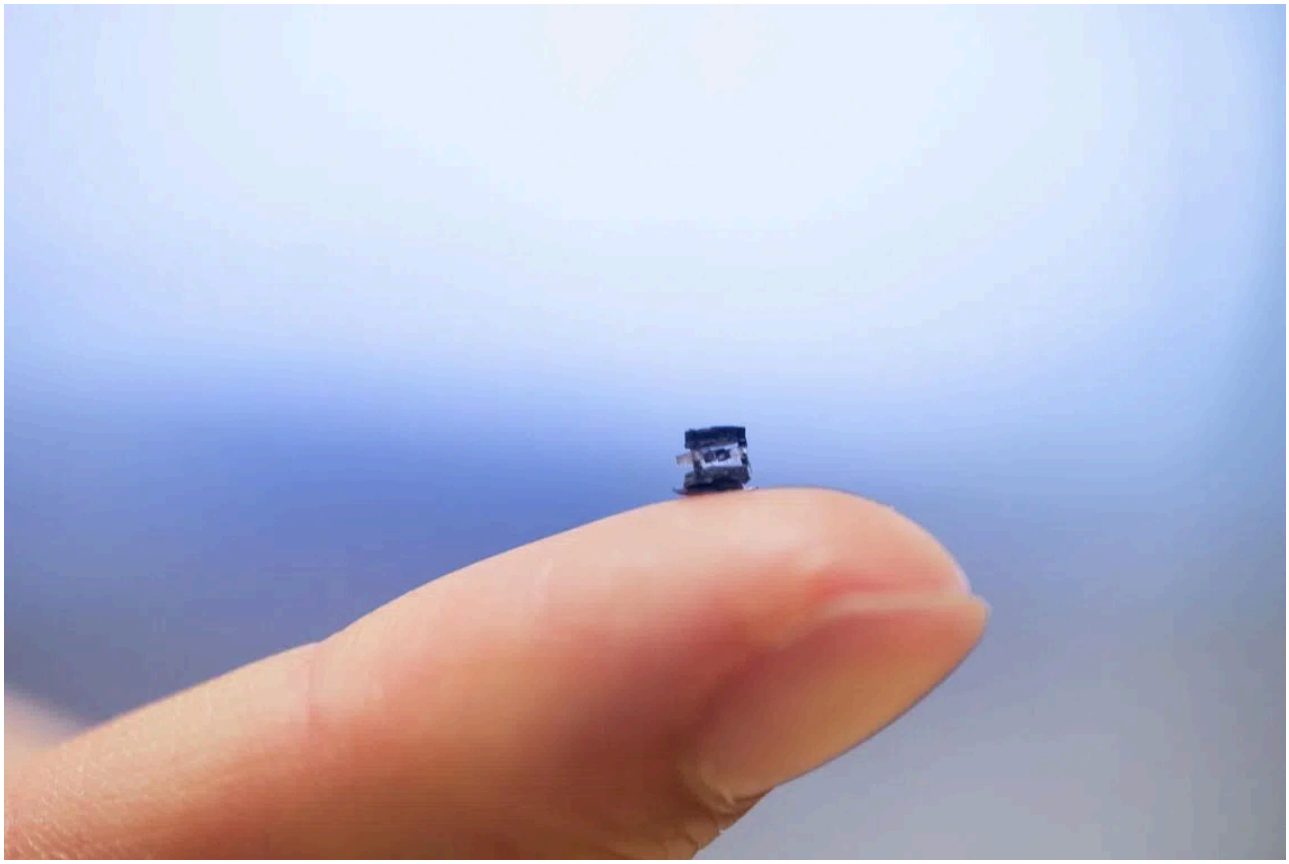
This robot is capable of moving inside the human body, delivering medication to the exact location needed, cutting biological tissue, and picking up and storing tissue samples.

Researchers from Nanyang Technological University (NTU - Singapore) have developed a robot measuring just 4.4 mm in length, which could be used in the future to perform minimally invasive surgeries, such as biopsies and tumor removal.

This robot is capable of moving inside the human body, delivering medication to the precise location needed, cutting biological tissue, and picking up and storing tissue samples. "The robot can be miniaturized to just 1.5 mm, thereby expanding its potential applications in many more types of endoscopic surgery," Lum Guo Zhan, the research team leader, told The Straits Times on May 31.

The robot mentioned above can also generate heat inside its body when activated. This technology enhances the effectiveness of ongoing magnetic hyperthermia treatments aimed at destroying or weakening cancer cells without invasive surgery.

"The micro-robot can move to very specific locations and generate precise localized heat. This allows us to target cancer cells that need to be destroyed while minimizing impact on healthy cells," Lum explained. According to the expert, the micro-robot has been developed over the past seven years and may be integrated with imaging technology and sensor systems in the future.



Micro-robots developed by researchers at Nanyang Technological University could be used in the future to perform minimally invasive surgeries. (Image: NANYANG TECHNOLOGY UNIVERSITY)

Regarding commercialization plans, Lum said that in the short term, his team aims to deploy robots in medical interventions in easily accessible areas such as the ears, nose, and throat. In the long term, the team's vision is to expand applications to other organs such as the brain and heart, providing minimally invasive surgical solutions for complex cases.

According to Leonard Yeo, an expert at the National University Hospital Singapore, the robot's extremely small size sets it apart from current surgical robots. "They have the potential to replace many aspects of interventional radiology surgery, opening up a new treatment approach in medicine," he stated.